

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (withdrawn, currently amended) A method for twin-sheet thermoforming plastic fuel tanks, according to which first and second sheets (SA, SB) of thermoformable plastic material are independently heated and moved along a first (A) and, respectively, along a second (B) processing line from a loading station (11A, 11B) to a respective thermoforming station (16A, 16B), the first and second processing lines being parallelly arranged, the method comprising the main steps of:

- subjecting each plastic sheet (SA, SB) to a heating;
- pneumatically clamping the heated plastic sheet sheets (SA, SB) along [[its]] their peripheral edges by air suction, and vacuum supporting the same sheets (SA, SB) in a substantially flat condition by controlling a vacuum degree while it is the sheets (SA, SB) are moved along the respective processing line (A, B);
- positioning each heated plastic sheet (SA, SB) above a respective shaping mold (17A, 17B) having a facing-up shaping cavity, while continuing to pneumatically hold the sheet sheets (SA, SB) in the aforesaid substantially flat condition;

- lowering the heated plastic sheet sheets (SA, SB) into a respective mold (17A, 17B); and

- thermoforming each heated plastic sheet (SA, SB) into a respective shell (GA, GB), making the same sheet (SA, SB) to adhere to the upwardly open cavity of the shaping mold (17A, 17B);

the method also comprising the supplementary steps of:

- up-side down turning one (17B) of the shaping molds (17A, 17B) and the thermoformed shell (GB);

- superimposing said up-side down turned mold (17B) to the other one (17A) facing up mold (17A), to overlap peripheral sealing areas of the two superimposed thermoformed shells (GA, GB); and

- fusing and hermetically welding the overlapped sealing areas of the shells (GA, GB) by pressing said overlapped sealing areas between clamping surfaces of the shaping molds (17A, 17B).

2. (withdrawn) The method for twin-sheet thermoforming of fuel tanks according to claim 1, comprising the steps of preheating (12A, 12B) each plastic sheet (SA, SB) to a first heating temperature lower than a thermoforming temperature, and maintaining the heating of the sheet (SA, SB) while it is moving along the processing line (A, B).

3. (withdrawn, currently amended) The method for twin-sheet thermoforming of fuel tanks according to claim 2, comprising the steps of controlling and adjusting the vacuum degree for supporting the sheet (SA, SB), to prevent sagging during the heating and movement along the processing line (A, B).

4. (withdrawn) The method for twin-sheet thermoforming of fuel tanks according to claim 1, comprising the steps of introducing inserts and/or components for the fuel tank, into the upwardly facing cavity of the molds, before thermoforming of the plastic sheets (SA, SB).

5. (withdrawn) The method for twin-sheet thermoforming of fuel tanks according to claim 1, comprising the steps of introducing inserts and/or components of the fuel tank, into the thermoformed shells (GA, GB) through the upwardly facing cavity of the molds (17A, 17B).

6. (withdrawn) The method for twin-sheet thermoforming of fuel tanks according to claim 1, comprising the steps of removing the closed molds (17A, 17B), and of carrying out a cooling of the same closed molds (17A, 17B) outside of the processing lines.

7. (currently amended) A plant for manufacturing

plastic fuel tanks comprising first and second twin-sheet thermoformed shells (GA, GB), according to which first and second thermoformable plastic sheets (SA, SB) are independently heated and moved along respective first and second parallelly arranged processing lines (A, B), from a loading station (11A, 11B) through at least one heating station (12A, 14A; 12B, 14B), towards a respective thermoforming station (16A, 16B) where the individual plastic sheets (SA, SB) are thermoformed in a first and a second shaping mold (17A, 17B) into a first and second respective shell (GA, GB) ~~into a respective first and second shaping mold (17A, 17B)~~, wherein:

- said first and second shaping molds (17A, 17B) are side by side arranged with the open cavities of both molds (17A, 17B) facing upwards;

wherein each processing line (A, B) comprises a pneumatically actuatable ~~gripping means gripper~~ (24A, 24B) formed from air suction frames configured for gripping the plastic sheets (SA, SB) around their peripheral edges, and a vacuum sheet holding device (15A, 15B) including a vacuum chamber (22) for holding the heated plastic sheets (SA, SB), said pneumatic ~~gripping means gripper~~ (24A, 24B) and said vacuum sheet holding device (15A, 15B) being movable along the processing lines (A, B); and a vacuum control means device including an adjustable vacuum source to control a vacuum degree in the vacuum chamber (22) of [[for]] the vacuum sheet holding device (24A, 24B) (15A,

15B) for supporting the heated plastic sheets (SA, SB) in a substantially flat condition;

a pneumatic gripping frame on said vacuum sheet holding device (15A, 15B), a corresponding gripping frame (36A, 36B) movingly supported by control cylinders 37A, 37B, and

a drive means (33) conformed and arranged to turn one mold of molds (17A, 17B) upside down to superimpose to the other [[one]] molds of molds (17A, 17B) and to cause welding of overlapped sealing areas of the thermoformed shells (GA, GB), by compression of the overlapped sealing areas by the same molds (17A, 17B).

8. (previously presented) The plant for manufacturing plastic fuel tanks according to claim 7, comprising a sheet preheating station (12A, 12B).

9. (previously presented) The plant for manufacturing plastic fuel tanks according to claim 7, comprising a sheet centering station (13A, 13B).

10. (previously presented) The plant for manufacturing plastic fuel tanks according to claim 9, wherein the sheet centering station (13A, 13B) is provided upstream of the sheet preheating station (12A, 12B).

11. (previously presented) The plant for manufacturing plastic fuel tanks according to claim 9, wherein the centering station (13A, 13B) is provided between the preheating station (12A, 12B) and a second heating station (14A, 14B) for the plastic sheets (SA, SB).

12. (currently amended) The plant for manufacturing plastic fuel tanks according to claim 7, wherein the vacuum supporting sheet holding device (15A, 15B) comprises heating elements (28) for the plastic sheets (SA, SB).

13. (currently amended) The plant for manufacturing plastic fuel tanks according to claim 7, wherein said vacuum supporting sheet holding device (15A, 15B) is connected to [[a]] the adjustable vacuum source.

14. (currently amended) The plant for manufacturing plastic fuel tanks according to claim 7, wherein ~~each mold (17A, 17B)~~ the corresponding gripping frame comprises a second pneumatically actuatable ~~sheet gripping means gripper~~ (36A, 36B) corresponding to each mold (17A, 17B).

15. (currently amended) The plant for manufacturing plastic fuel tanks according to claim 7, wherein said vacuum sheet holding device (15A, 15B) is in the form of a pneumatically

actuable suction bell.

16. (currently amended) The plant for manufacturing plastic fuel tanks according to claim 7, comprising a mold cooling station (20) on one side of the processing lines (A, B), in a side aligned condition with a thermoforming station (16A, 16B), the mold cooling station (20) being configured for transferring the closed molds (17A, 17B) between the thermoforming station (16A, 16B) and the cooling station (20) of the plant.

17. (previously presented) The plant for manufacturing plastic fuel tanks according to claim 16, wherein the cooling station (20) comprises a rotary table (50) having a plurality of mold supporting surfaces (51, 52).

18. (withdrawn) The plant for manufacturing plastic fuel tanks according to claim 16, wherein the cooling station (20) comprises a reciprocable mold supporting shuttle (54) parallelly arranged to the processing lines (A, B), said shuttle (54) being provided with at least a first and a second mold supporting surfaces (55, 56).

19. (currently amended) The plant for manufacturing plastic fuel tanks according to claim 16, wherein ~~said means a~~

device for transferring the molds (17A, 17B) comprise a mold clamping cage (40, 41) reciprocable between a thermoforming station (16A, 16B) and the cooling station (20).

20. (previously presented) The plant for manufacturing plastic fuel tanks according to claim 7, wherein said drive means for upside down turning one mold (17B), comprises a book press.

21. (previously presented) The plant for manufacturing fuel tanks according to claim 14, wherein each mold (17A, 17B) comprises additional mechanical means (48) for gripping the edges of the heated plastic sheets (SA, SB).